

REMARKS

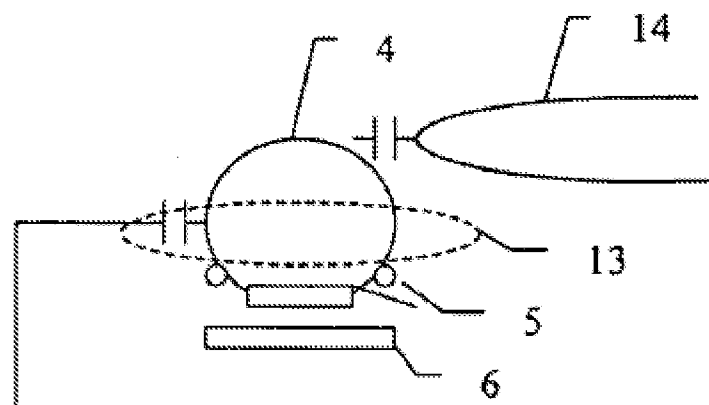
Claims 9, 10, 12, 15-19, and 21-25 are pending in the application. The Applicant respectfully requests favorable reconsideration of the application based on the following remarks.

Claims 9, 10, 15-17, 21, and 22-24

Claims 9, 10, 15-17, 21, and 22-24 have been rejected under 35 U.S.C. § 103(a) over WO 00/20959 to Rapaich in view of GB 2 279 750 to Ryan, U.S. Patent No. 6,703,599 to Casebolt et al., and U.S. Patent No. 6,058,485 to Koziuk.

Independent claim 9 recites, among other features, that the user-manipulable member is moveable in response to a finger of a user and that a movement sensor (in addition to an activity sensor) is present. As claimed, the activity sensor detects when a finger of a user approaches or touches the user-manipulable member. This "wakes-up" the movement sensor, which outputs pointing command signals in response to movement of the user-manipulable member.

To aid in the description of the claimed subject matter, a portion of the electrical pathway set forth in independent claim 9 and illustrated by figure 2 of the application is reproduced below:

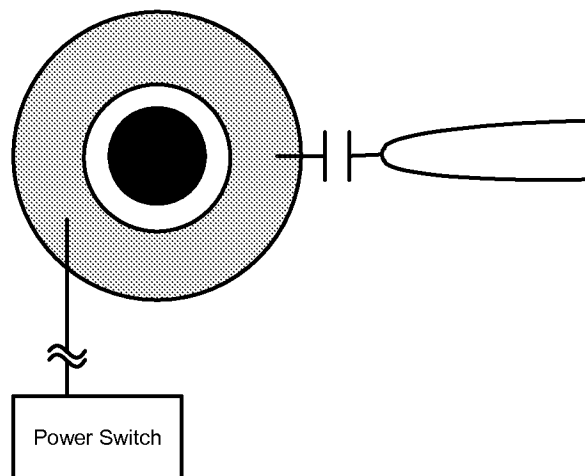


The claimed activity sensor works in the following manner. A resonant circuit is capacitively coupled to a conductive part of the user-manipulable member 4 with a member 13 disposed with respect member 4. From the claim language, and as illustrated, one may consider the member 13 and the conductive part of member 4 as forming electrodes of a capacitor.

As further specified in the claim, and as illustrated, when a user's finger 14 approaches the conduct part of member 4, a second capacitance is formed between the finger and the conduct part. When a finger is not near the conduct part, it will be appreciated that the resonant circuit has an idle frequency (page 3, lines 25-27). But, when the finger is present to establish the second capacitance, the claim specifies that the resonant frequency of the resonant circuit changes, the change is detected, and the movement sensor is activated.

Rapaich is directed to an input mechanism that uses a passive touch plate arranged to activate a switch for providing power to the input mechanism. Rapaich is passive in the sense that the touch plate does not emit an electric field.

To better understand the operation of Rapaich, the following figure is presented:



This figure is adapted from the figures appearing Rapaich, but more clearly shows how Rapaich operates. In Rapaich, the touch plate (annular grey member in the figure) surrounds a moveable member. The moveable member forms no part of the

activation circuit in Rapaich. Rather, the touch plate and a finger of a user effectively form electrodes of a capacitor. When the user places his or her finger near the touch plate, a change in capacitance at the touch plate is detected by the power switch, which includes an amplifier, a comparator, and a logic gate.

Rapaich does not disclose the dual capacitive arrangement found in the claimed invention. In addition, the Office Action seemingly ignores this aspect of the claims. More importantly, even if the proposed combination were made, missing from the combination would be the claimed capacitive arrangement from member 13 to conductive member of the user-manipulable member 4, together with the claimed capacitive arrangement from the conductive member of the user-manipulable member 4 to the user's finger to effect a change in the resonant circuit.

For this reason alone, the rejections should be withdrawn. However, for the sake of completeness, additional reasons as to why the rejections do not render the claims obvious will be discussed.

For instance, it is also apparent that Rapaich provides no teaching, suggestion, or motivation to use a resonant circuit and detector to detect a change in the frequency of the resonant circuit. However, the Office Action contends that it would have been obvious to modify the activity sensor of Rapaich by using the resonance circuit and detector of Ryan as a sensing means for capacitance change in the input device.

Ryan is directed to a proximity sensor device that relies on electrode sets that "are supplied with alternating voltages so that an alternating electric field is produced in their vicinity. Conductive or dielectric bodies entering this field affect the field so that the current from the electrode(s) that creates the field is affected." (Ryan, page 4) Therefore, Ryan relies on an active electrode arrangement from which an electric field emanates.

The Office Action contends that the reason one would combine Rapaich and Ryan is to have a capacitive proximity sensor that has low power consumption and low manufacturing cost. Even though Ryan may have low power consumption and may be

inexpensive to manufacture, there is no evidence on the record to show that the power consumption and/or manufacturing cost of Ryan's detector arrangement are comparatively lower than the power consumption and/or manufacturing cost of Rapaich's detector arrangement. Therefore, the proffered reason for combining the references is tenuous at best and fails to establish a legitimate reason for the combination that can be considered anything but impermissible hindsight. Plus, the stated rationale would more likely lead the skilled artisan away from the combination. This is because Ryan relies on an active proximity sensor that emits an electric field. This undoubtedly consumes additional power. Therefore, the skilled artisan would not look to Ryan to modify the passive touch sensor of Rapaich based on these different operating principles. Ryan similarly teaches away from the claimed approach where a conductive part is passively arranged so that an approaching finger influences frequency changes in the claimed resonant circuit.

Regardless, even if Rapaich and Ryan were combined, the Office Action admits that the combination does not yield "a resonant circuit that is capacitively coupled to a conductive part of the user-manipulable member by a member disposed with respect to the user-manipulable member." However, the Office Action contends that it would have been obvious to one of ordinary skill in the art to modify the combination of Rapaich and Ryan by integrating the activity sensor into a user-manipulable member as taught by Casebolt.

But this contention does not contribute to the formation of a prima facie case of obviousness. Casebolt is directed to a system and method for proximity detection by measuring output from a phototransistor that generates a voltage in response to an electromagnetic illumination. Specifically, infrared light emitting diodes (LEDs) and phototransistors (PTRs) are located on the top and the side of a wireless mouse. Light from the LEDs is reflected by an approaching object and the reflected light is detected by the PTRs for purposes of activating the device. Therefore, Casebolt works on still another type of operating principle and one of ordinary skill in the art would not look to

the LED/PTR sensing arrangement of Casebolt to modify the combination of Rapaich or Ryan.

And, contrary to the analysis of the Office Action, even if Casebolt were combined with Rapaich and Ryan, the combination still does not yield the claimed subject matter. That is, Casebolt provides no disclosure whatsoever of "a resonant circuit that is capacitively coupled to a conductive part of the user-manipulable member by a member disposed with respect to the user-manipulable member." Therefore, Casebolt does not teach or suggest the subject matter that the Office Action expressly states is missing from the Rapaich/Ryan combination. While Casebolt's LED/PTR sensing arrangement is integrated with a mouse, the proposed combination is deficient in arriving at the claimed subject matter.

Lastly, the Office Action adds Koziuk to the combination for the teaching of a timer to switch off energization of the movement sensor. Koziuk is directed to a touch sensitive panel that does not include any moveable parts, and has no readily apparent relevancy to the claimed subject matter other than the timer. Therefore, even if Koziuk were combined with the other references, the claimed subject matter would not result.

For at least the foregoing reasons, independent claim 9 and the claims depending therefrom are patentable over the proposed combination. As a result, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested.

Claim 12

Claim 12 has been rejected under 35 U.S.C. § 103(a) over Rapaich in view of Ryan, Casebolt, and Koziuk, and further in view of U.S. Patent No. 6,661,410 to Casebolt (Casebolt_2). Claim 12 depends from claim 9. Also, Casebolt_2 does not cure the deficiencies of the proposed combination of Rapaich, Ryan, Casebolt and Koziuk. Thus, even if this combination were made, the claimed subject matter would

not result. Therefore, reconsideration and withdrawal of this rejection under 35 U.S.C. § 103(a) is respectfully requested.

Claims 18 and 19

Claims 18 and 19 has been rejected under 35 U.S.C. § 103(a) over Rapaich in view of Ryan, Casebolt, and Koziuk, and further in view of EP 1073004 to Kiljander. Claims 18 and 19 depend from claim 9. Also, Kiljander does not cure the deficiencies of the proposed combination of Rapaich, Ryan, Casebolt and Koziuk. Thus, even if this combination were made, the claimed subject matter would not result. Therefore, reconsideration and withdrawal of this rejection under 35 U.S.C. § 103(a) is respectfully requested.

Claim 25

Claim 25 has been rejected under 35 U.S.C. § 103(a) over Rapaich in view of Ryan, Casebolt, and Koziuk, and further in view of U.S. Patent No. 6,583,784 to Helmbrecht. Claim 12 depends from claim 9. Also, Helmbrecht does not cure the deficiencies of the proposed combination of Rapaich, Ryan, Casebolt and Koziuk. Thus, even if this combination were made, the claimed subject matter would not result. Therefore, reconsideration and withdrawal of this rejection under 35 U.S.C. § 103(a) is respectfully requested.

Conclusion

In light of the foregoing, it is respectfully submitted that the present application is in condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

Serial No. 10/511,573

If there are any fees resulting from this communication, please charge same to our Deposit Account No. 18-0988.

Respectfully submitted,

RENNER, OTTO, BOISSELLE & SKLAR, L.L.P.

By /MDavidGalin/
M. David Galin; Reg. No. 41,767

1621 Euclid Avenue
19th Floor
Cleveland, Ohio 44115
216/621-1113